Status of Landfill Gas Activities in Texas

By Wayne Lee

Landfill Gas Basics

- Landfill gas is created when waste in a landfill decomposes.
- This gas is about 50 percent methane, also known as natural gas, and 45 percent carbon dioxide.

Landfill Gas Basics

- There were six landfills that recovered gas in 2001 in Texas.
- Approximately 74 landfills in Texas have been identified that might be able to viably recover gas. This is based on the amout of waste in place. These landfills collected more than 3.9 billion cubic feet of gas.
- Four of these six landfills used the collected gas for fuel and the other two used the gas for electric generation.

Landfill Gas Basics

- Environmental Benefits of the Recovery and Use of Landfill Gas:
- Although methane - the principal component of landfill gas - is odorless, many other gases produced in trace levels by landfills and carried with the methane have offensive odors.
- Landfills can and often do generate concentrations of methane that are both flammable and explosive.
- Landfill gas that migrates through the soil can penetrate nearby buildings, bringing the hazards of fire or explosion to their occupants.

Landfill Gas Basics

- If these gases are instead collected, each of these problems can be reduced or eliminated.
- A typical landfill gas collection system is a series of wells that are drilled into the landfill and connected by a piping system.
- Although modern landfills must have gas collection systems, most landfill operators in Texas have chosen to flare the collected gas.

Landfill Gas Basics

- A viable option can be to use this gas to generate electricity, depending on the volume of gas produced by the landfill, the local cost of electricity, and the viability of distributing the electricity produced.

Landfill Gas Basics

- Burning methane to generate electricity turns this greenhouse gas into carbon dioxide.
- Although carbon dioxide is also a greenhouse gas, it has less than 5 percent of the heat-trapping effect of methane.
- In short, the recovery and productive use of landfill gas can increase local supplies of electricity while removing a source of environmental problems.

Landfill Gas Basics

- Gas recovery facilities in Texas are termed Type IX facilities.
- A registration is required from the MSW program.

Gas Recovery Status

- A total of ten authorizations have been issued for gas recovery since September 1, 2001.
- Approved Type IX facilities are located in San Antonio, Houston (2), Waco, Conroe (2), Arlington, Galveston, Tarrant County, and Baytown.

Gas Recovery Status

- Two registration applications are pending in Texas.
- One in Tarrant County and one in Conroe.

Policy Implications

- House Bill 3415 went into effect in 2001 and encourages the development and use of landfill gas for state energy and environmental purposes.
- The bill added Section 361.040 to Chapter 361 of the Health and Safety Code, and the bill took effect on September 1, 2001.
- An important aspect of the bill is the requirement for the TCEQ to “give priority to processing applications for registrations.”

Policy Implications

- House Bill 3415 was authored by State Representative Ruth Jones McClendon of San Antonio.

Policy Implications

- In accordance with the directive from the bill, the program has given priority to reviewing applications for new Type IX gas recovery facilities.
- Additionally, two new policies have been implemented to streamline the application requirements and review requirements.

Policy Implications

- House Bill 3415 required a progress report to the legislature regarding the status of the development of landfill gas in the state.
- The report was published and is available today as a handout.
- The report is available online.

Policy Implications

- As discussed in an earlier session, bioreactors landfills can produce large, steady supplies of usable methane.
- Rules and laws regarding bioreactors are pending.

Questions?

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The End!